National Institute of Environmental Health Sciences

Externalities of fugitive dust

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Abstract:

It is known that fugitive dust can cause human health and environmental problems, alone or in combination with other air pollutants. These problems are referred to as 'external costs' that have been traditionally ignored. However, there is a growing interest towards quantifying externalities to assist policy and decision-making. With this in mind, the present study aimed at discussing the environmental regulations that deal with fugitive dust, the impact of fugitive dust on human health and global climate system, and the available methods for calculating fugitive dust externalities. The damage cost associated with human health and global environmental problems was predicted based on the environmental strategy priority model. The damage cost estimated by the model ranged from 40 to 374 EUR/kg of emitted fugitive dust with a mean value of 120 EUR/kg of emitted fugitive dust. It was also found that PM2.5 and PM10 have contributed to about 60% and 36% of the estimated damage cost, respectively. The remaining 4% was attributed to both nitrate and sulfate aerosols. © Springer Science+Business Media B.V. 2006.

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Resource Description

Exposure :

weather or climate related pathway by which climate change affects health

Air Pollution

Air Pollution: Particulate Matter, Other Air Pollution

Air Pollution (other): SO2; NOx

Geographic Feature:

resource focuses on specific type of geography

None or Unspecified

Geographic Location:

resource focuses on specific location

Global or Unspecified

Health Co-Benefit/Co–Harm (Adaption/Mitigation):

specification of beneficial or harmful impacts to health resulting from efforts to reduce or cope with greenhouse gases

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Health Impact: ☑

specification of health effect or disease related to climate change exposure

Morbidity/Mortality

Mitigation/Adaptation: ☑

mitigation or adaptation strategy is a focus of resource

Adaptation

Model/Methodology: ☑

type of model used or methodology development is a focus of resource

Cost/Economic, Methodology

Resource Type: ☑

format or standard characteristic of resource

Research Article

Timescale: ☑

time period studied

Short-Term (

Vulnerability/Impact Assessment: ☑

resource focus on process of identifying, quantifying, and prioritizing vulnerabilities in a system

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